pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0253308**
Facility Type	**Industrial**	APS ID	**988353**
Major / Minor	**Minor**	Authorization ID	**1264846**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**AK Steel Corp**	Facility Name	**AK Steel Hillside Landfill**
Applicant Address	PO Box 832	Facility Address	2301 Duss Avenue
	Butler, PA 16003		Ambridge, PA 15003
Applicant Contact	Frank Monteleone	Facility Contact	Same as Applicant
Applicant Phone	(724) 284-3367	Facility Phone	Same as Applicant
Client ID	139851	Site ID	668156
SIC Code	9999	Municipality	Harmony Township
SIC Description	Public Admin. - Nonclassifiable Establishment	County	Beaver
Date Published in PA Bulletin	April 20, 2019	EPA Waived?	Yes
Comment Period End Date	May 20. 2019	If No, Reason	

Purpose of Application: Application for a new NPDES permit for discharge of treated Industrial

Internal Review and Recommendations

The notice of the Draft Permit was published in the Pennsylvania Bulletin on April 20, 2019.

Comment were received from AK Steel Corporation on May 17, 2019 and are included in Attachment D and summarized below.

AK Steel comment one:

The first comment from AK Steel discusses the receiving stream for the Outfall 001 discharge. AK Steel stated that the Fact Sheet didn't clearly identify the receiving stream because the NHD COM ID was listed as 99681044, which is the ID for Legionville Run but the fact sheet listed the receiving stream as an unnamed tributary to the Ohio River. Additionally, AK Steel claims that the Department improperly selected the drainage area and Q7-10 of the receiving stream. AK Steel claims the discharge from the Siphon Pond flows as overland flow to an unnamed tributary to the Ohio River. AK Steel believes that the discharge from the site should be analyzed just before the stream is culverted under the highway and railroad tracks to the Ohio River and not at the end of pipe of the Siphon Pond. With the discharge being analyzed at this point, AK Steel believes that the drainage area should be 0.46 square miles and the Q7-10 flow should be 0.00262 cfs; therefore, changing the water quality based effluent limitations to the following:

Pollutant	Average Monthly Limit (mg/L)	Daily Maximum Limit (mg/L)
Total Boron	2.2	4.4
Dissolved Iron	0.36	0.72
Total Manganese	1.4	2.8

Approve	Deny	Signatures	Date
X		Adam Olesnanik / Environmental Engineering Specialist	7-22-19
✓		Michael E. Fifth, P.E. / Environmental Engineer Manager	7/31/19

Internal Review and Recommendations

Departments Response to comment one:

The discharge stream that has been identified by both the Department and AK Steel is an unnamed tributary to the Ohio River. The NHD COM ID that was included in the Fact Sheet was a typographic error and should not have been included in the Fact Sheet. The unnamed tributary to the Ohio River is not an identified stream; therefore, the stream has no NHD COM ID number. However, the Department conducted a stream survey on June 18, 2019 and verified that it is a stream; the report is included in Attachment E. The Southwest Regional Office has submitted a request to DEP's Central Office to update its GIS system to identify the stream.

When the Department conducted the water quality analysis of the discharge, discharge data was evaluated at the point of discharge from the Siphon Pond. After further evaluation, it was determined that the discharge is not directly to a stream but to a wetland prior to the unnamed tributary of the Ohio River. During the stream survey, it was determined that the point of first use was after this wetland at the unnamed tributary to the Ohio River. Therefore, the water quality analysis in the draft permit was conducted with the wrong drainage area and Q7-10 flow. Using the revised drainage area and Q7-10 flow, the effluent limitations for total boron, dissolved iron, and total manganese have been changed to monitor only. The water quality analysis is described later in this Addendum in more detail.

AK Steel comment two:

AK Steel's second comment was with respect to the quantitation limitations used for the Total PCBs. AK Steel believes that the Quantitation Limitation (QL) for Total PCBs should be < 0.50 µg/l or the sum of the two Aroclors sampled. AK Steel still has concerns with this concept and suggests that the QL for total PCBs be removed and that the following replaces it; "report at the total of detected values of Aroclor 1016 and 1242. Count non-detect values for Aroclor 1016 and 1242 based on the Quantitation Limits specified in Part C. III. of the permit as zero. This Condition supersedes Part C III. C. of the permit for Total PCBs."

Department's response to comment two:

The Department agrees with AK Steel that the QL for Total PCBs should be < 0.50 µg/l or the sum of the two Aroclors sampled. The Department will not include the suggest Part C condition because it does not give total PCBs an actual limitation and it will not require the permittee to report the Total PCBs detected results. Department believes that the summation of the two aroclors is an adequate way to gauge compliance with the effluent limits. The QL for Total PCBs has been changed in Part C of the permit to < 0.50 µg/l.

AK Steel comment three:

AK Steel's third comment discusses AK Steel's concern with PCB Treatment.

Department's response to comment three:

The Department acknowledges AK Steel's concern; however, this comment doesn't affect or change the Draft Permit. No changes were made to the Final Permit due to this comment.

AK Steel comment four:

AK Steel's fourth comment discusses the monitoring frequency for the 3-year interim compliance period. AK Steel believes that the monitoring frequency should be reduced to once per month for the 3-year interim period because this data is used for data collection and effluent characterization and not for compliance determinations.

Department's response to comment four:

The Department would argue that AK Steel already knows the characterization of the effluent because they have been monitoring dissolved iron and manganese in the discharge for years. Additionally, with twice per month sampling AK Steel would collect more data on the discharge which would be useful for evaluating treatment options. The purpose of having monitor only for the first three years, is so that AK Steel can implement treatment and not be in violation of the permit upon issuance. The sampling frequency in the Final Permit will remain the same as the Draft Permit. No changes have been made to the Final Permit due to this comment.

Internal Review and Recommendations

AK Steel comment five:

AK Steel's fifth comment discusses the Draft Permit Part C. I. G. The condition states; "The permittee shall obtain a Water Quality Management (WQM) permit from DEP for construction of treatment facilities and complete construction in accordance with the WQM permit application prior to commencing discharges authorized by this permit." AK Steel request that the "prior to commencing discharges authorized by this permit" part of the condition be removed.

Department's response to comment five:

The Department agrees with AK Steel that the "prior to commencing discharges authorized by this permit" part of the condition was a typographic error and should not have been included in the permit. The "prior to commencing discharges authorized by this permit" part of the condition has been removed from the Final Permit and the Part C condition will state "The permittee shall obtain a Water Quality Management (WQM) permit from DEP for construction of treatment facilities and complete construction in accordance with the WQM permit application."

Conclusion and Recommendations:

Part C. condition I. G. has been revised to state; "The permittee shall obtain a Water Quality Management (WQM) permit from DEP for construction of treatment facilities and shall complete construction in accordance with the WQM permit application."

The effluent limitations have been changed based on the water quality analysis and are described on the following pages of this report.

Due to changes to the effluent limitations the permit is to be redrafted for an additional 30-day public comment period.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.004
Latitude	40º 36' 58"	Longitude	-80º 13' 51"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Seeps from landfill and stormwater surface run-off		
Receiving Waters	Unnamed Tributary to Ohio River	Stream Code	Not Applicable
NHD Com ID	Not Applicable	RMI	0.1
Drainage Area	0.69	Yield (cfs/mi^2)	0.006
Q_{7-10} Flow (cfs)	0.00424	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	695	Slope (ft/ft)	0.001
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	Center Township Water Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	5,880
PWS RMI	953.78	Distance from Outfall (mi)	8.82

USGS StreamStats Data is included in Attachment A.

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.004
Latitude	40º 36' 58"	**Longitude**	-80º 13' 51"

Wastewater Description: Seeps from landfill and stormwater surface run-off

Water Quality-Based Limitations

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential and Developing WQBELs

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken from the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (see Attachment B).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by PENTOXSD. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are collected on a spreadsheet titled "Toxics Screening Analysis" and is displayed in Attachment B.

PENTOXSD Water Quality Modeling Program

PENTOXSD Version 2.0 for Windows is a single discharge, mass-balance water quality modeling program that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number and discharge flow rate are entered into PENTOXSD to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Pollutants are then selected for analysis based on those present or likely to be present in a discharge at levels that may cause, have the reasonable potential to cause, or contribute to excursions above state water quality standards (i.e., a reasonable potential analysis). Discharge concentrations for the selected pollutants are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). PENTOXSD then evaluates each pollutant by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, PENTOXSD recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are used for toxics screening as described above. The PENTOXSD model is run with the discharge and

receiving stream characteristics shown in Table 1. The pollutants selected for analysis include those identified as candidates for modeling by the Toxics Screening Analysis spreadsheet (in accordance with Step 2 of the Toxics Screening Analysis procedure discussed above). Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis.

Table 1. PENTOXSD Input

Parameter	Value
River Mile Index	0.1
Discharge Flow (MGD)	0.004
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.69
Q_{7-10} (cfs)	0.00424
Low-flow yield (cfs/mi^2)	0.006
Elevation (ft)	695
Slope	0.0001

The WQBELs calculated using PENTOXSD are compared to the maximum reported effluent concentrations as described in the Toxics Screening Analysis section above to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of the Toxics Screening Analysis, Outfall 001 will receive WQBELs for Total Iron and Total PCBs and Monitoring requirements for Total Boron, Dissolved Iron, and Total Manganese, which are displayed in Table 2 below. Output from the PENTOXSD model runs are included in Attachment C. The Toxics Screening Analysis spreadsheet recommended modeling PENTOXSD for total dissolved solids (TDS). TDS is a potable water supply (PWS) parameter, where the Department models the effect the discharge has at the nearest downstream potable water supply intake. In this case, the nearest PWS intake is on the Ohio River. Based on the discharge flow and TDS concentration, if the discharge is modeled on the Ohio River the Toxics Screening Analysis Spreadsheet would not recommend TDS for modeling based on the dilution ratio. Therefore, it is presumed that this discharge on a tributary of the Ohio River further away from the PWS intake will not receive limits for these parameters as well. Additionally, because PCB-1242 and PCB-1016 are known to be present in the discharge and are contributing to the Total PCBs, these parameters will receive monitor and report requirements in the Draft Permit.

Table 2. WQBELs from PENTOXSD and Toxics Screening Analysis for Outfall 001

Parameter	Monthly Average	Daily Maximum
Total Boron (mg/L)	Monitor	Monitor
Total Iron (mg/L)	2.53	3.94
Dissolved Iron (mg/L)	Monitor	Monitor
Total Manganese (mg/L)	Monitor	Monitor
Total PCBs (µg/L)	0.000713	0.001
PCB-1016 (µg/L)	Monitor	Monitor
PCB-1242 (µg/L)	Monitor	Monitor

Proposed Effluent Limitations

The proposed effluent limitations for Outfall 001 are displayed in Table 3 below, they are the most stringent values from the above re-evaluated water quality analysis and the effluent limitation development from the previous draft factsheet. Flow monitoring, pH monitoring, and Oil and Grease limits are regularity effluent standards from 25 PA Code Chapter 92a.61(d)(1), 95.2(1), and 95.2(2) respectively. The total iron limitation is technology based BPJ effluent limitation and the total PCB limitation if from Ohio River TMDL, which are described in more detail in the first Draft Fact Sheet.

Table 3: Proposed Effluent Limitations at Outfall 001

Parameter	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
Flow (MGD)	XXX	Report	Report	XXX	2/ Month	Measured
pH (S.U.)	6.0	XXX	9.0	XXX	2/ Month	Grab
Oil & Grease (mg/L)	XXX	15.0	30.0	XXX	2/ Month	Grab
Total Boron (mg/L)	XXX	Monitor	Monitor	XXX	2/ Month	Grab
Total Iron (mg/L)	XXX	1.5	3.0	XXX	2/ Month	Grab
Dissolved Iron (mg/L)	XXX	Monitor	Monitor	XXX	2/ Month	Grab
Total Manganese (mg/L)	XXX	Monitor	Monitor	XXX	2/ Month	Grab
Total PCBs (µg/L)	XXX	0.000064	0.000064	XXX	2/ Month	Grab
PCB-1016 (µg/L)	XXX	Monitor	Monitor	XXX	2/ Month	Grab
PCB-1242 (µg/L)	XXX	Monitor	Monitor	XXX	2/ Month	Grab

The WQBEL for Total PCBs is more stringent that the Department's quantitation limits. For the purpose of compliance, a Part C Condition will be included in the permit stating that a statistical value report on the DMR that is less than the QLs (I.E. non-detect) will be considered to be in compliance. The results for the PCBs must be non-detect at the QL for all of the congeners, to be in compliance. If one of the congeners is detected at or above the QL, it is a violation of the total PCB effluent limitation. The QLs for the PCBs are displayed below in Table 4.

Table 4: Quantitation Limitation for Compliance

Parameter Name	Quantitation Limit
Total PCBs	0.50 µg/L
PCB-1016	0.25 µg/L
PCB-1242	0.25 µg/L

Compliance Schedule and Interim Monitoring

AK Steel does not have the necessary controls in place to ensure compliance with the limitations listed in Table 3 above for Total Iron and Total PCBs upon permit issuance. Therefore, the permit will include a Schedule of Compliance, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, which grants AK Steel three years to come into compliance with the WQBELs. Because the WQBELs will not be effective upon permit issuance, the permit will be tiered to have interim and final monitoring requirements and effluent limits. For the first three years, a reporting requirement will be imposed for these parameters. After three years, the WQBELs will take effect. A Part C condition will be included in the Draft NPDES Permit outlining a compliance schedule for these parameters.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment **C**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **B**)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☒	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachments

Attachment A: USGS StreamStats Data

Attachment B: Toxics Screening Analysis Results for Outfall 001

Attachment C: PENTOXSD Model Run

Attachment D: AK Steel Corporation's comment on Draft Permit

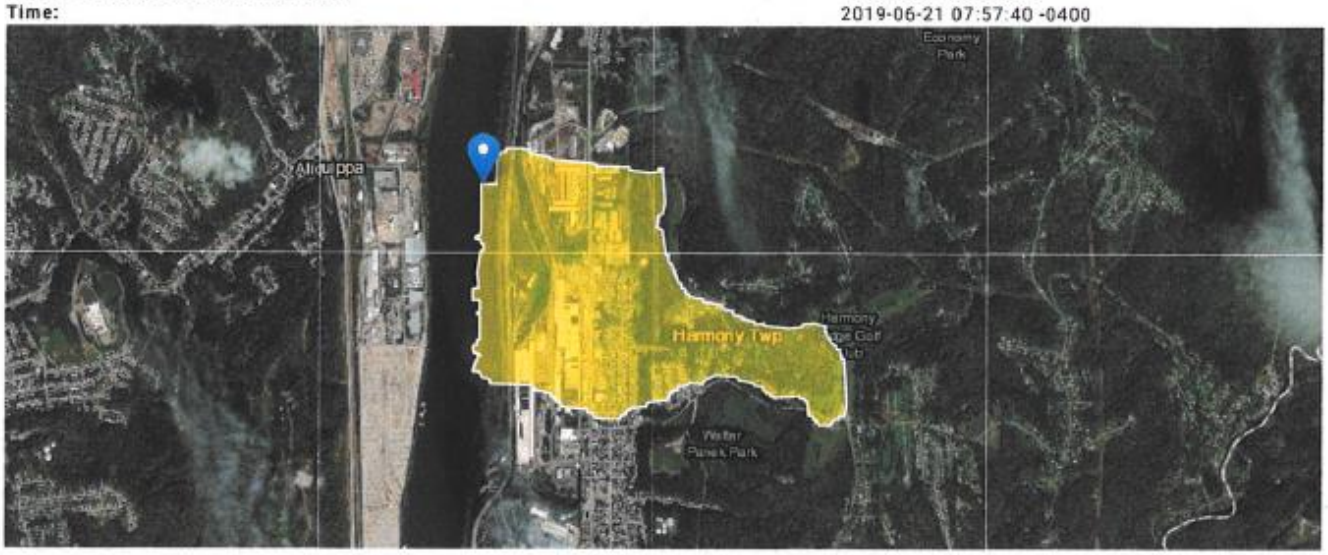
Attachment E: Unnamed Tributary to Ohio River Point of First Use Survey

Attachment A:

USGS StreamStats Data

StreamStats Report

Region ID:	PA
Workspace ID:	PA20190621115723721000
Clicked Point (Latitude, Longitude):	40.61737, -80.23343
Time:	2019-06-21 07:57:40 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.69	square miles
ELEV	Mean Basin Elevation	835.8	feet

Low-Flow Statistics Parameters[Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	2.26	1400
ELEV	Mean Basin Elevation	835.8	feet	1050	2580

Low-Flow Statistics Disclaimers[Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errorsOne or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0136	ft^3/s
30 Day 2 Year Low Flow	0.0261	ft^3/s
7 Day 10 Year Low Flow	0.00424	ft^3/s
30 Day 10 Year Low Flow	0.00903	ft^3/s
90 Day 10 Year Low Flow	0.0173	ft^3/s

Attachment B:

Toxics Screening Analysis Results for Outfall 001

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

Facility: **AK Steel Ambridge Hillside Landfill**
NPDES Permit No.: **PA0253308**
Outfall: **001**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.004**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0042**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		468000	500000	Yes		
	Chloride			250000			
	Bromide	<	87	N/A	No		
	Sulfate		68000	250000	No		
	Fluoride		0.28	2000	No		
Group 2	Total Aluminum		6.6	750	No		
	Total Antimony		0.31	5.6	No		
	Total Arsenic		0.47	10	No		
	Total Barium		104	2400	No		
	Total Beryllium	<	0.087	N/A	No		
	Total Boron		895	1600	Yes	2696	Monitor
	Total Cadmium	<	0.088	0.271	No (Value < QL)		
	Total Chromium	<	5	N/A	No		
	Hexavalent Chromium	<	0.0032	10.4	No (Value < QL)		
	Total Cobalt	<	5	19	No		
	Total Copper		1.3	9.3	No		
	Total Cyanide		0.01	N/A	No		
	Total Iron		3290	1500	Yes	2527	Establish Limits
	Dissolved Iron		160	300	Yes	505.6	Monitor
	Total Lead	<	1	3.2	No (Value < QL)		
	Total Manganese		772	1000	Yes	1685	Monitor
	Total Mercury	<	0.2	0.05	No (Value < QL)		
	Total Molybdenum	<	20	N/A	No		
	Total Nickel	<	10	52.2	No		
	Total Phenols (Phenolics)		51	5	Yes		
	Total Selenium	<	0.81	5.0	No (Value < QL)		
	Total Silver	<	0.09	3.8	No (Value < QL)		
	Total Thallium	<	0.12	0.24	No (Value < QL)		
	Total Zinc		15.4	119.8	No		

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Discharge Flow (MGD): **0.004**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0042**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 3	Acrolein	<	2	3	No (Value < QL)		
	Acrylamide	<		0.07			
	Acrylonitrile	<	2	0.051	No (Value < QL)		
	Benzene	<	0.5	1.2	No (Value < QL)		
	Bromoform	<	1	4.3	No		
	Carbon Tetrachloride	<	0.5	0.23	No (Value < QL)		
	Chlorobenzene	<	1	130	No		
	Chlorodibromomethane	<	0.5	0.4	No (Value < QL)		
	Chloroethane	<	1	N/A	No		
	2-Chloroethyl Vinyl Ether	<	2	3500	No (Value < QL)		
	Chloroform	<	1	5.7	No		
	Dichlorobromomethane	<	0.5	0.55	No (Value < QL)		
	1,1-Dichloroethane	<	1	N/A	No		
	1,2-Dichloroethane	<	0.5	0.38	No (Value < QL)		
	1,1-Dichloroethylene	<	1	33	No		
	1,2-Dichloropropane	<	1	2200	No		
	1,3-Dichloropropylene	<	0.5	0.34	No (Value < QL)		
	Ethylbenzene	<	1	530	No		
	Methyl Bromide	<	5.9	47	No		
	Methyl Chloride	<	1	5500	No		
	Methylene Chloride	<	1	4.6	No		
	1,1,2,2-Tetrachloroethane	<	0.5	0.17	No (Value < QL)		
	Tetrachloroethylene	<	0.47	0.69	No (Value < QL)		
	Toluene	<	1	330	No		
	1,2-trans-Dichloroethylene	<	1	140	No		
	1,1,1-Trichloroethane	<	1	610	No		
	1,1,2-Trichloroethane	<	0.45	0.59	No (Value < QL)		
	Trichloroethylene	<	1	2.5	No		
	Vinyl Chloride	<	0.5	0.025	No (Value < QL)		

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Discharge Flow (MGD): **0.004**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0042**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 4	2-Chlorophenol	<	11.1	81	No		
	2,4-Dichlorophenol	<	11.1	77	No		
	2,4-Dimethylphenol	<	11.1	130	No		
	4,6-Dinitro-o-Cresol	<	1.5	13	No (Value < QL)		
	2,4-Dinitrophenol	<	27.8	69	No		
	2-Nitrophenol	<	11.1	1600	No		
	4-Nitrophenol	<	11.1	470	No		
	p-Chloro-m-Cresol	<	0.064	30	No (Value < QL)		
	Pentachlorophenol	<	0.25	0.27	No (Value < QL)		
	Phenol	<	11.1	10400	No		
	2,4,6-Trichlorophenol	<	0.071	1.4	No (Value < QL)		

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

Facility: **AK Steel Ambridge Hillside Landfill**
NPDES Permit No.: **PA0253308**
Outfall: **001**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.004**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0042**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 5	Acenaphthene	<	0.068	17	No (Value < QL)		
	Acenaphthylene	<	11.1	N/A	No		
	Anthracene	<	11.1	8300	No		
	Benzidine	<	11.1	0.000086	No (Value < QL)		
	Benzo(a)Anthracene	<	0.078	0.0038	No (Value < QL)		
	Benzo(a)Pyrene	<	0.055	0.0038	No (Value < QL)		
	3,4-Benzofluoranthene	<	0.1	0.0038	No (Value < QL)		
	Benzo(ghi)Perylene	<	11.1	N/A	No		
	Benzo(k)Fluoranthene	<	0.092	0.0038	No (Value < QL)		
	Bis(2-Chloroethoxy)Methane	<	11.1	N/A	No		
	Bis(2-Chloroethyl)Ether	<	0.042	0.03	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	11.1	1400	No		
	Bis(2-Ethylhexyl)Phthalate	<	4.8	1.2	No (Value < QL)		
	4-Bromophenyl Phenyl Ether	<	11.1	54	No		
	Butyl Benzyl Phthalate	<	11.1	35	No		
	2-Chloronaphthalene	<	11.1	1000	No		
	4-Chlorophenyl Phenyl Ether	<	11.1	N/A	No		
	Chrysene	<	0.084	0.0038	No (Value < QL)		
	Dibenzo(a,h)Anthrancene	<	0.075	0.0038	No (Value < QL)		
	1,2-Dichlorobenzene	<	11.1	160	No		
	1,3-Dichlorobenzene	<	11.1	69	No		
	1,4-Dichlorobenzene	<	11.1	150	No		
	3,3-Dichlorobenzidine	<	0.61	0.021	No (Value < QL)		
	Diethyl Phthalate	<	11.1	800	No		
	Dimethyl Phthalate	<	11.1	500	No		
	Di-n-Butyl Phthalate	<	0.77	21	No (Value < QL)		
	2,4-Dinitrotoluene	<	0.053	0.05	No (Value < QL)		
	2,6-Dinitrotoluene	<	0.063	0.05	No (Value < QL)		
	1,4-Dioxane	<	2	N/A	No		
	Di-n-Octyl Phthalate	<	11.1	N/A	No		
	1,2-Diphenylhydrazine	<	0.051	0.036	No (Value < QL)		
	Fluoranthene	<	11.1	40	No		
	Fluorene	<	11.1	1100	No		
	Hexachlorobenzene	<	0.58	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	0.072	0.44	No (Value < QL)		
	Hexachlorocyclopentadiene	<	0.52	1	No (Value < QL)		
	Hexachloroethane	<	0.065	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	0.089	0.0038	No (Value < QL)		
	Isophorone	<	11.1	35	No		
	Naphthalene	<	11.1	43	No		
	Nitrobenzene	<	0.17	17	No (Value < QL)		
	n-Nitrosodimethylamine	<	0.07	0.00069	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	0.074	0.005	No (Value < QL)		
	n-Nitrosodiphenylamine	<	0.12	3.3	No (Value < QL)		
	Phenanthrene	<	0.059	1	No (Value < QL)		
	Pyrene	<	11.1	830	No		
	1,2,4-Trichlorobenzene	<	11.1	26	No		

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

Facility: **AK Steel Ambridge Hillside Landfill**
NPDES Permit No.: **PA0253308**
Outfall: **001**
Analysis Hardness (mg/L): **100**
Discharge Flow (MGD): **0.004**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0042**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
	PCB-1242		0.18	N/A	No		
	PCB-1254	<	0.0029	N/A	No		
	PCB-1221	<	0.0029	N/A	No		
	PCB-1232	<	0.0029	N/A	No		
	PCB-1248	<	0.0029	N/A	No		
	PCB-1260	<	0.0029	N/A	No		
	PCB-1016		0.65	N/A	No		
	Toxaphene	<		0.0002			
	2,3,7,8-TCDD	<		0.000000005			
Group 7	Gross Alpha (pCi/L)	<		N/A			
	Total Beta (pCi/L)	<		N/A			
	Radium 226/228 (pCi/L)	<		N/A			
	Total Strontium	<		4000			
	Total Uranium	<		N/A			
	PCBs, Total		0.8445	0.000064	Yes	0.000713	Establish Limits

Attachment C:

PENTOXSD Model Run

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
36593	0.10	695.00	0.69	0.00100	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0.00424	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
AK Steel Ambrid	PA0253308	0.004	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
BORON	1E+10	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	1E+10	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	1E+10	0	0.5	0.5	0	0	0	0	1	0
PCB, TOTAL	2E+10	0	0.5	0.5	0	0	0	0	1	0
PCB-1016	1E+10	0	0.5	0.5	0	0	0	0	1	0
PCB-1242	1E+10	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	1E+10	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
36593	0.05	694.00	0.70	0.00100	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0.00424	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
BORON	0	0	0.5	0.5	0	0	0	0	1	0
DISSOLVED IRON	0	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0
PCB, TOTAL	0	0	0.5	0.5	0	0	0	0	1	0
PCB-1016	0	0	0.5	0.5	0	0	0	0	1	0
PCB-1242	0	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

SWP Basin	Stream Code:	Stream Name:
20G	36593	Trib 36593 to Ohio River

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
0.100	0.0042	0	0.0042	0.00618	0.001	0.2586	2.6029	10.064	0.0155	0.1973	.369
0.050	0.0085	0	0.0085	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
0.100	0.0627	0	0.0627	0.00618	0.001	0.5936	2.6029	4.3851	0.0446	0.0685	.531
0.050	0.1149	0	0.1149	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
0.10	**AK Steel Ambrid**	**PA0253308**

AFC

Q7-10: **CCT (min)** 0.369 **PMF** 1 **Analysis pH** 7 **Analysis Hardness** 100

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
MANGANESE	0	0	0	0	NA	NA	NA
BORON	0	0	0	0	8100	8100	13650.1
TOTAL IRON	0	0	0	0	NA	NA	NA
DISSOLVED IRON	0	0	0	0	NA	NA	NA
PCB-1242	0	0	0	0	NA	NA	NA
PCB-1016	0	0	0	0	NA	NA	NA
PCB, TOTAL	0	0	0	0	NA	NA	NA

CFC

Q7-10: **CCT (min)** 0.369 **PMF** 1 **Analysis pH** 7 **Analysis Hardness** 100

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
MANGANESE	0	0	0	0	NA	NA	NA
BORON	0	0	0	0	1600	1600	2696.315
TOTAL IRON	0	0	0	0	1500	1500	2527.796
	WQC = 30 day average. PMF = 1.						
DISSOLVED IRON	0	0	0	0	NA	NA	NA
PCB-1242	0	0	0	0	0.014	0.014	0.024
PCB-1016	0	0	0	0	0.014	0.014	0.024
PCB, TOTAL	0	0	0	0	0.014	0.014	0.024

THH

Q7-10: **CCT (min)** 0.369 **PMF** 1 **Analysis pH** NA **Analysis Hardness** NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
MANGANESE	0	0	0	0	1000	1000	1685.197

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
0.10	**AK Steel Ambrid**	**PA0253308**						
	BORON		0	0	0	0	3100	3100	5224.111
	TOTAL IRON		0	0	0	0	NA	NA	NA
	DISSOLVED IRON		0	0	0	0	300	300	505.559
	PCB-1242		0	0	0	0	NA	NA	NA
	PCB-1016		0	0	0	0	NA	NA	NA
	PCB, TOTAL		0	0	0	0	NA	NA	NA

CRL

Qh: **CCT (min)** 0.531 **PMF** 1

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
MANGANESE	0	0	0	0	NA	NA	NA
BORON	0	0	0	0	NA	NA	NA
TOTAL IRON	0	0	0	0	NA	NA	NA
DISSOLVED IRON	0	0	0	0	NA	NA	NA
PCB-1242	0	0	0	0	NA	NA	NA
PCB-1016	0	0	0	0	NA	NA	NA
PCB, TOTAL	0	0	0	0	0.000064	0.000064	0.000713

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
20G	36593	Trib 36593 to Ohio River

RMI	Name	Permit Number	Disc Flow (mgd)
0.10	AK Steel Ambrid	PA0253308	0.0040

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
BORON	2696.315	CFC	4206.686	2696.315	CFC
DISSOLVED IRON	505.559	THH	788.754	505.559	THH
MANGANESE	1685.197	THH	2629.178	1685.197	THH
PCB, TOTAL	0.000713	CRL	0.001	0.000713	CRL
PCB-1016	0.024	CFC	0.037	0.024	CFC
PCB-1242	0.024	CFC	0.037	0.024	CFC
TOTAL IRON	2527.796	CFC	3943.768	2527.796	CFC

Attachment D:

AK Steel Corporation’s comment on Draft Permit

May 17, 2019

Mr. Adam Olesnanik
Environmental Engineering Specialist
Pennsylvania Department of Environmental Protection
Clean Water Program
400 Waterfront Drive
Pittsburgh, PA 15222

Re: AK Steel Corporation Hillside Landfill
Draft NPDES Permit
Application No. PA0253308 / Authorization ID No. 1264846

Mr. Olesnanik:
Thank you for the opportunity to provide comments on the referenced draft NPDES permit published in Pennsylvania Bulletin on April 20, 2019. AK Steel's comments are provided below.

Receiving Stream for the Outfall 001 Discharge

The Fact Sheet does not clearly identify the receiving stream and appears to contain contradictory information in this regard. The receiving stream's 'NHD COM ID' (national common identification, Common ID) is listed as 99681044 on page 3 of the Fact Sheet. Common ID 99681044 is Legionville Run. However, as stated by the Department on page 2 of the Fact Sheet, the receiving stream for the Outfall 001 discharge is not Legionville Run, but is an Unnamed Tributary to the Ohio River.

The Fact Sheet then identifies the receiving stream as an Unnamed Tributary to the Ohio River with a drainage area of 0.0399 square miles, as delineated by the USGS StreamStats program (see Fact Sheet pages 3 and 12). The Fact Sheet contains the following statement at page 6:

> *Due to the outfall location there is no upland flow contribution at the point of discharge. The receiving stream has a Q7-10 of zero. For this reason, PENTOXSD water quality modeling program was not run for Outfall 001. Whenever industrial facilities discharge wastewater to an intermittent or zero-flow stream, the discharges must meet the water quality criteria published in PA Code Chapter 93.8.*

A reproduction of the Department's USGS StreamStats drainage area delineation is attached, with "imagery" selected as the base map. See attached Figure 1.

An aerial photograph of the site with pertinent drainage features identified is attached as Figure 2. As shown, the Siphon Pond discharge flows overland on AK Steel property before reaching an unnamed tributary, then passes through a culvert to the Ohio River. The unnamed tributary on

Figure 2 originates upstream of the Hillside Landfill site, such that the drainage area includes portions of Harmony Township and is larger than the 0.0399 square miles identified by the Department. An output from USGS StreamStats program for the unnamed tributary shown on Figure 2 is provided as Figure 3. The drainage area and Q7,10 of the unnamed tributary are 0.46 square miles and 0.00262 cfs, respectively, as calculated by the USGS StreamStats program. The unnamed tributary shown on Figure 2 is the first "stream" in the common sense of the word which receives the site discharge.

AK Steel believes the streamflow for the unnamed tributary shown on Figure 2 should be used for calculation of WQBELs (0.00262 cfs Q7,10). Using this Q7,10 stream flow and the site discharge flow rate of 0.004 mgd, AK Steel calculated WQBELs for boron, dissolved iron and manganese as follows:

Pollutant	Monthly Average WQBEL (mg/l)	Daily Maximum WQBEL (mg/l)
Total Boron	2.2	4.4
Dissolved Iron	0.36	0.72
Total Manganese	1.4	2.8

AK Steel requests that the WQBELs listed in the table above be included as the final limits in the NPDES permit.

Required Quantitation / Reporting Limit for Total PCBs

The draft permit contains the following quantitation limits that must be achieved for PCBs:

Aroclor 1016	0.25 ug/l
Aroclor 1242	0.25 ug/l
Total PCBs	0.25 ug/l

AK Steel understands, and agrees with, the Department's intent to consider any detected value over 0.25 ug/l for either Aroclor 1016 or 1242 to be an exceedance of the "Total PCBs" water quality based effluent limit of 0.000064 ug/l. However, AK Steel believes that the PCB quantitation limits as currently presented in the proposed draft permit conflict with this intention. When achieving a quantitation limit of 0.25 ug/l individually for Aroclors 1016 and 1242, by definition the "Total PCBs" quantitation limit would be 0.50 ug/l. That is, mathematically < 0.25 ug/l + < 0.25 ug/l = < 0.50 ug/l.

To address this issue, AK Steel suggests removing the "Total PCBs" quantitation limit from the permit, and including a footnote to the final effluent limits table for "Total PCBs" that reads as follows:

PCBs, Total (ug/l)[1]; [1] Report as the total of detected values of Aroclor 1016 and 1242. Count non-detect values for Aroclor 1016 and 1242 based on the Quantitation Limits specified in Part C. III. of the permit as zero. This condition supersedes Part C III. C. of the permit for Total PCBs.

Achieving Final Effluent Limits for Total PCBs

Preliminary discussions with potential vendors of PCB treatment systems indicate that the concentrations in the site discharge are generally already "low" from a treatability perspective and that treatment to below quantifiable concentrations may prove problematic. As the project to identify PCB removal technologies proceeds, AK Steel may contact the Department regarding this topic if treatability study results and scientific data suggest that treatment to achieve the permitted discharge limit is problematic.

Monitoring Frequency

The monitoring frequency specified in the draft permit for all pollutants and flow rate is twice per month from the permit effective date to the permit expiration date. AK Steel requests for the interim three-year period, prior to the numeric effluent limits becoming effective, that the monitoring frequency be specified as once per month. The data collected during the three year period will be used to characterize the effluent and not for compliance determinations, as the limits will not yet be effective. A specified monitoring frequency of once per month will provide AK Steel sufficient data to characterize the effluent over the course of the three-year interim period, as well as the flexibility to monitor more frequently for effluent characterization to support treatment system design if needed, while still providing the providing the Department with sufficient routine monitoring data on a monthly basis. Additionally, the Hillside Landfill is an unstaffed location, which requires additional resources for sampling above that required for staffed industrial facilities. This change will allow AK Steel to avoid the unnecessary expenditure of limited resources while still providing sufficient data to the Department and AK Steel during this interim period.

NPDES Permit Part C. I. G. (draft permit page 19)

Part C.I.G. of the draft permit contains the following statement:

The permittee shall obtain a Water Quality Management (WQM) permit from DEP for construction of treatment facilities and complete construction in accordance with the WQM permit application prior to commencing discharges authorized by this permit.

AK Steel believes including the underlined statement above was likely an oversight by the Department. AK Steel requests that it be removed. The intent of the NPDES permit is to

authorize the discharge upon the permit effective date, with a compliance schedule to achieve the final water quality based effluent limits. AK Steel understands that a Water Quality Management permit application must be submitted in accordance with the compliance schedule in the permit.

Thank you for considering our comments. Please contact me 724.284.2267 should you have any questions.

Sincerely,

Russell Dudek
Senior Environmental Manager
AK Steel Corporation

Attachments

cc: Frank Montelone
Mark Amendola

Figure 1
Reproduction of PADEP "Unnamed Tributary" USGS
StreamStats Drainage Area Delineation with
Imagery Base Map

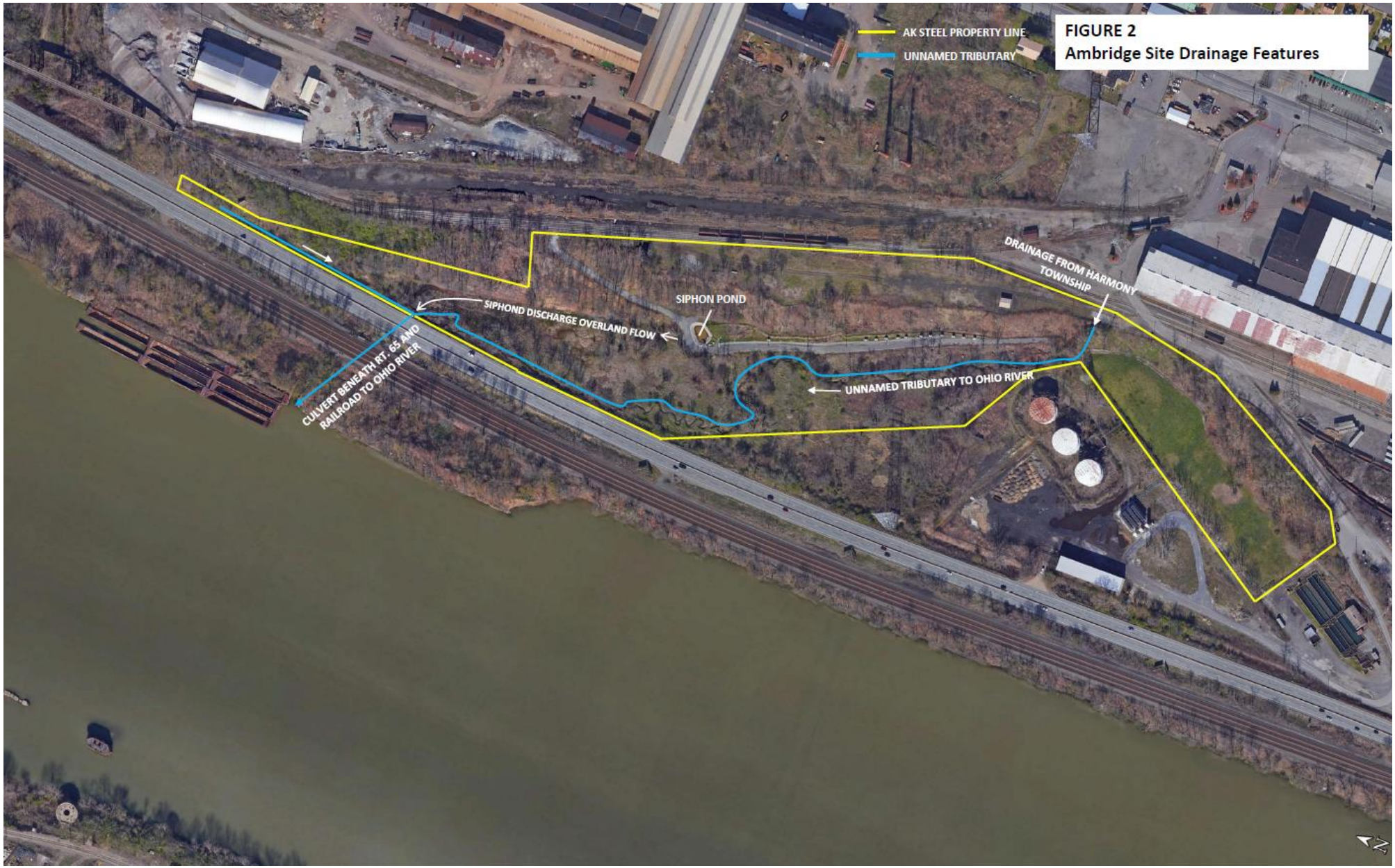

AK STEEL PROPERTY LINE
UNNAMED TRIBUTARY
FIGURE 2
Ambridge Site Drainage Features
DRAINAGE FROM HARMONY TOWNSHIP
SIPHON POND
SIPHOND DISCHARGE OVERLAND FLOW
UNNAMED TRIBUTARY TO OHIO RIVER
CULVERT BENEATH RT. 65 AND RAILROAD TO OHIO RIVER

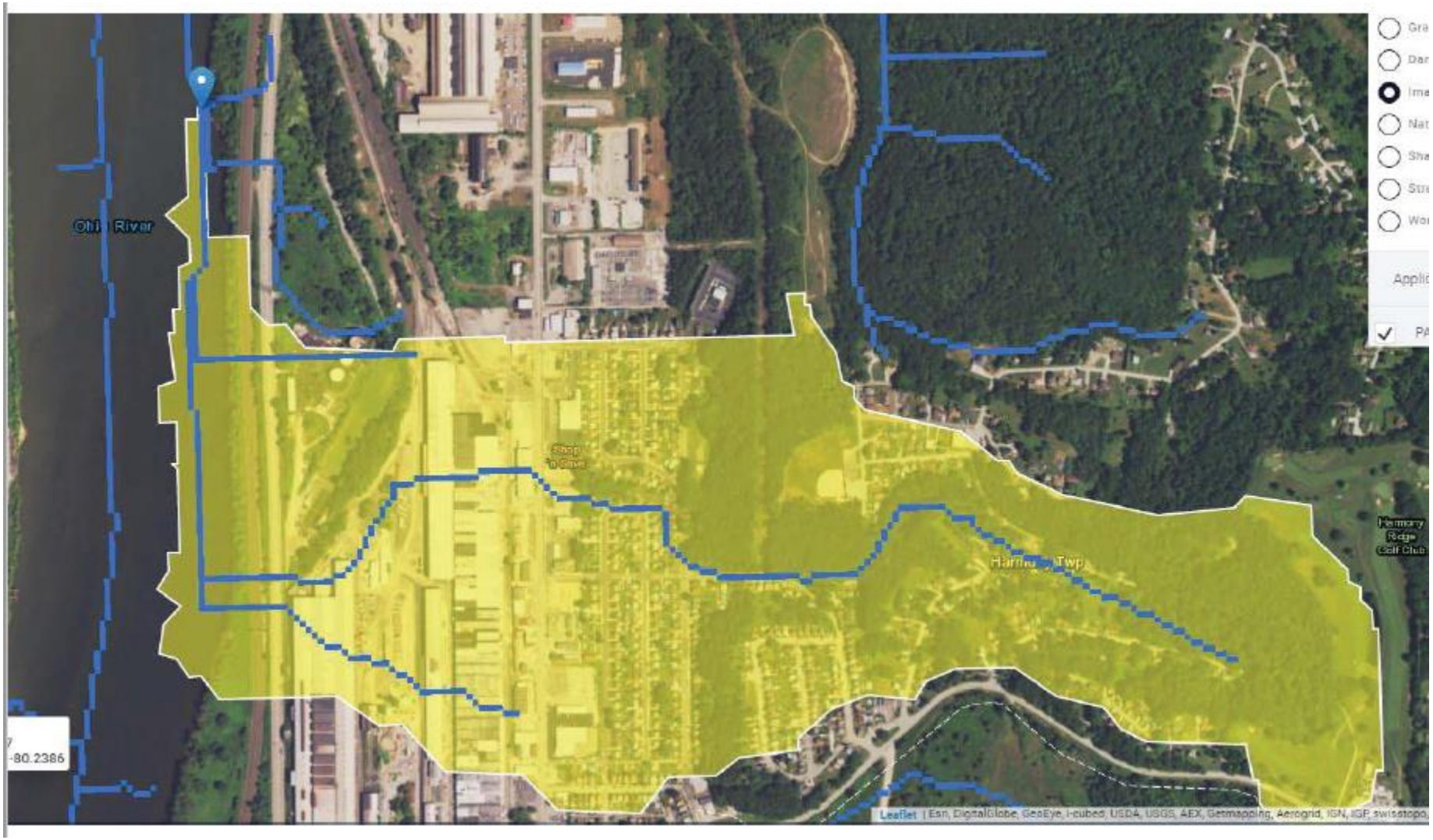
FIGURE 3
USGS STREAMSTATS REPORT
FOR UNNAMED TRIBUTARY

StreamStats Report

Region ID: PA
Workspace ID: PA20190104014636879000
Clicked Point (Latitude, Longitude): 40.61533, -80.23310
Time: 2019-01-03 20:46:32 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit


Ohio River
-80.2386
Harmony Twp
Harmony Ridge Golf Club
Leaflet | Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo,

StreamStats

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.46	square miles
ELEV	Mean Basin Elevation	862.9	feet
CARBON	Percentage of area of carbonate rock	0	percent
PRECIP	Mean Annual Precipitation	37	inches
FOREST	Percentage of area covered by forest	12	percent
URBAN	Percentage of basin with urban development	78	percent
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0	percent

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.46	square miles	2.26	1400
ELEV	Mean Basin Elevation	862.9	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00881	ft^3/s
30 Day 2 Year Low Flow	0.0173	ft^3/s
7 Day 10 Year Low Flow	0.00262	ft^3/s

StreamStats

Statistic	Value	Unit
30 Day 10 Year Low Flow	0.00577	ft^3/s
90 Day 10 Year Low Flow	0.0114	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Bankfull Statistics Parameters [Statewide Bankfull Noncarbonate 2018 5066]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.46	square miles	2.62	207
CARBON	Percent Carbonate	0	percent		

Bankfull Statistics Disclaimers [Statewide Bankfull Noncarbonate 2018 5066]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Bankfull Statistics Flow Report [Statewide Bankfull Noncarbonate 2018 5066]

Statistic	Value	Unit
Bankfull Area	6.67	ft^2
Bankfull Streamflow	24.2	ft^3/s
Bankfull Width	10	ft
Bankfull Depth	0.709	ft

Bankfull Statistics Citations

StreamStats

Clune, J.W., Chaplin, J.J., and White, K.E.,2018, Comparison of regression relations of bankfull discharge and channel geometry for the glaciated and nonglaciated settings of Pennsylvania and southern New York: U.S. Geological Survey Scientific Investigations Report 2018–5066, 20 p. (https://doi.org/10.3133/sir20185066)

Annual Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.46	square miles	2.26	1720
ELEV	Mean Basin Elevation	862.9	feet	130	2700
PRECIP	Mean Annual Precipitation	37	inches	33.1	50.4
FOREST	Percent Forest	12	percent	5.1	100
URBAN	Percent Urban	78	percent	0	89
CARBON	Percent Carbonate	0	percent	0	99

Annual Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	0.548	ft^3/s
Harmonic Mean Streamflow	0.0954	ft^3/s

Annual Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

StreamStats

Base Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.46	square miles	2.26	1720
PRECIP	Mean Annual Precipitation	37	inches	33.1	50.4
CARBON	Percent Carbonate	0	percent	0	99
FOREST	Percent Forest	12	percent	5.1	100
URBAN	Percent Urban	78	percent	0	89

Base Flow Statistics Disclaimers [Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Base Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Base Flow 10 Year Recurrence Interval	0.142	ft^3/s
Base Flow 25 Year Recurrence Interval	0.125	ft^3/s
Base Flow 50 Year Recurrence Interval	0.115	ft^3/s

Base Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Peak-Flow Statistics Parameters [Peak Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit

StreamStats

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.46	square miles	1.44	1610
ELEV	Mean Basin Elevation	862.9	feet	457	2150
CARBON	Percent Carbonate	0	percent	0	99
STORAGE	Percent Storage	0	percent	0	22.6

Peak-Flow Statistics Disclaimers [Peak Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Peak Flow Region 3]

Statistic	Value	Unit
2 Year Peak Flood	46.9	ft^3/s
5 Year Peak Flood	88.4	ft^3/s
10 Year Peak Flood	124	ft^3/s
50 Year Peak Flood	220	ft^3/s
100 Year Peak Flood	270	ft^3/s
500 Year Peak Flood	409	ft^3/s

Peak-Flow Statistics Citations

Roland, M.A., and Stuckey, M.H.,2008, Regression equations for estimating flood flows at selected recurrence intervals for ungaged streams in Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2008-5102, 57p. (http://pubs.usgs.gov/sir/2008/5102/)

StreamStats

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Application Version: 4.3.0

Attachment E:
Unnamed Tributary to Ohio River Point of First Use Survey

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office
July 17, 2019
(412) 442-4178

SUBJECT: **Point of First Use Survey**
Unnamed and Undocumented Tributary to the Ohio River
State Water Plan 20G, WWF, HUC Code 05030101, Stream Code N/A
Harmony Township, Beaver County, Pennsylvania

To: Michael Fifth
Clean Water, Environmental Engineer Manager, Permits Section

From: Jamie Detweiler
Aquatic Biologist 2
Southwest Regional Office

On June 18, 2019, the Clean Water Program biologists performed an examination of the Unnamed and Undocumented Tributary to the Ohio River in Harmony Township, Beaver County (Figure 1). The stream drains the AK Steel Hillside Landfill Property, which is located at 2301 Duss Avenue, Ambridge, PA 15003. The latitude of the sampling location is 40.617046°; and the longitude is -80.235186°. The watercourse was approximately 1 meter wide. Adam Olesnanik from the Department and Frank Monteleone and Russ Dudek from AK Steel accompanied us.

This survey was performed using a D-frame kick net. Each kick disturbed a 1m sq. area. Six kicks were conducted.

According to the "Implementation Guidance for Evaluating Wastewater Discharges to Drainage Swales and Ditches," a stream has an aquatic use where it is capable of supporting a benthic macroinvertebrate population composed of two or more recognizable taxonomic groups. The representative organisms must be large enough to be seen by the unaided eye and retained by a US Standard No. 35 Sieve (0.500 mm) as well as living part of their life cycle within or upon substrates in a body of water. In addition, the organisms must have relatively long aquatic life stages.

Sampling Results

The results from the kick samples collected a total of eight macroinvertebrate family level taxa, and three higher taxa. They included the following families:

Chironomidae (Midges), Simulidae (Black Flies), Empididae (Dance Flies), Dolichopodidae (Longlegged Flies), Elmidae (Riffle Beetles), Hydropshychidae (Net-Spinning Caddisflies), Baetidae (Small Minnow Mayflies), Gammaridae (Scuds); and the following higher level taxa: Platyhelminthes (flatworms), Oligochaeta (Segmented Worms), Hirudinea (Leaches).

Water chemistries taken out in the field with an YSI Pro DSS multimeter were as follows: Temperature of 18.10° C, DO of 7.59 mg/l, Specific Conductivity of 383 µg/cm and a pH of 7.14.

Conclusion

Three of the eleven taxa identified have long-lived taxa. The presence of these macroinvertebrates indicates an aquatic life use that must be protected, and also indicates that the point of sampling is the Point of First Use. There is an aquatic life use in the Unnamed and Undocumented Tributary to the Ohio River and the discharge permit limits should support this aquatic use.

CC: Rick Spear
Stacey Greenwald
Adam Olesnanik
Chris Kriley
Travis Stoe
Michael (Josh) Lookenbill
Stream Files

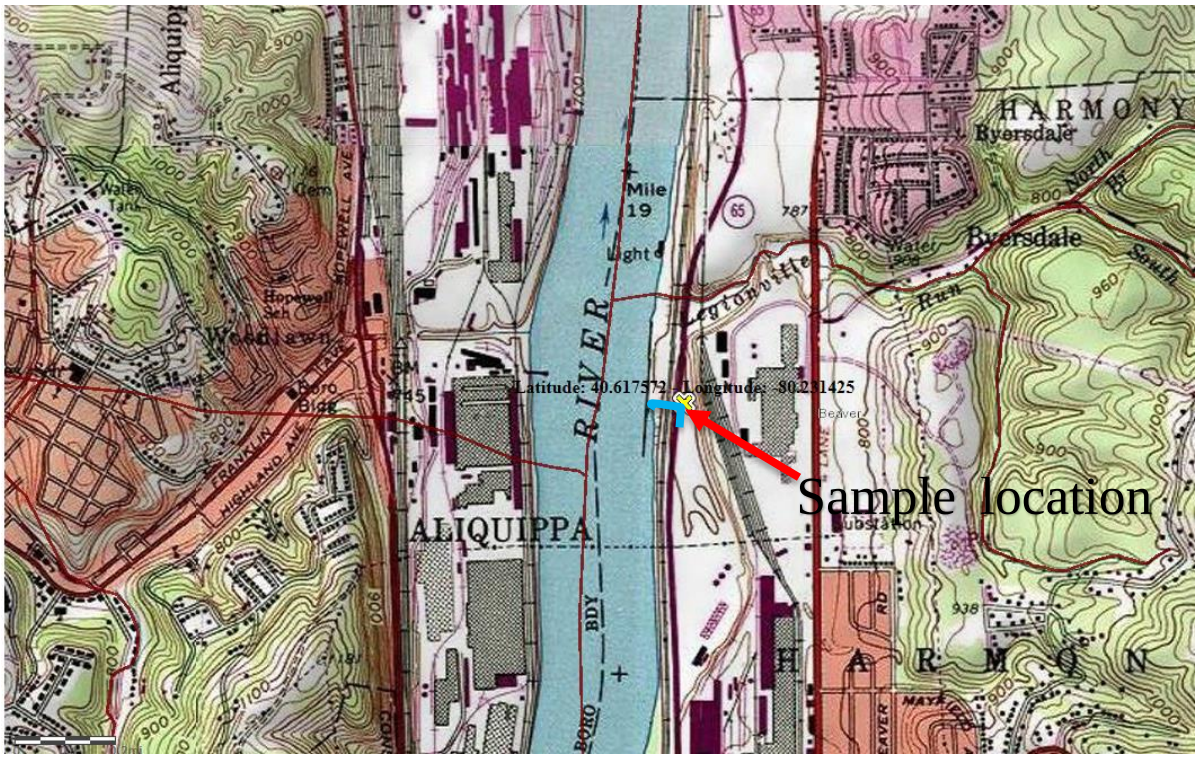

Figure 1. Approximate location of sampling point and the Unnamed and Undocumented Tributary to the Ohio River.

Figure 2. Picture of the Unnamed and Undocumented Tributary of the Ohio River (looking upstream).

Figure 3. Picture of the Unnamed and Undocumented Tributary of the Ohio River (looking downstream).